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10/537,927	01/25/2006	Thomas Bowker	STADM-71279	8585

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EXAMINER	
SMITH, CHAD	
ART UNIT	**PAPER NUMBER**
2874	

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09/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,927	BOWKER ET AL.	
	Examiner	Art Unit	
	Chad H. Smith	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-17,21,22 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21,22 and 25* is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *6 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/537,927.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on 6/19/07 has been fully considered and entered.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4-10, and 13-17 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

1. Claims 21, 22 and 25 are allowed. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, taken alone or in combination, fails to disclose or render obvious an optical fiber assembly for deployment down a capillary tube located in a well bore, comprising: an optical fiber having a core portion and a cladding portion; a flexible protective tube having an outside surface and an inside surface, the inside surface encasing the optical fiber along the entire length of the optical fiber intended to be deployed down the capillary tube such that there is no liquid between the inside surface of the flexible protective tube and the optical fiber, the flexible tube being hermetically sealed; and a hydrogen scavenging material applied to the inside surface of the flexible tube for preventing permeation of fluid or gas through the flexible tube.

Claim Objections

2. Claim 6 is objected to as it contradicts independent claim 1 by putting a coating between the flex tubing and the optical fiber. Appropriate correction is required.

3. Claim 10 is objected to because of the following informalities: There is no antecedent basis for --the well--, it should read --a well-- and will be interpreted as such. Furthermore, it is assumed that --in the fiber-- should read --into the fiber--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7, 8, 9, 10, 14, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Pitt et al. (U.S. Patent # 4,696,543).

5. Regarding claims 7 and 9, Pitt et al. teaches an optical fiber suitable for deployment in a harsh environment, comprising: an optical fiber having core portion and a cladding portion (col. 2, lines 36 – 38); and a flexible barrier material encasing an outer diameter of the optical fiber for protecting the optical fiber from the harsh environment such that there is no other material or liquid disposed between the flexible barrier material and the outer diameter of the optical fiber (fig. 1).

6. Regarding claim 8, Pitt et al. teaches wherein the flexible barrier is a thin tubing (col. 2, lines 21 – 27).

7. Regarding claim 10, Pitt et al. teaches wherein the flexible barrier is made of a material that prevents the transmission of water vapor or gas from a well into the fiber (col. 1, lines 65 – 68).

As stated in MPEP §2114, "[w]hile features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function." *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). A claim containing "a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). As such, while the functional language limitations are ***not ignored***, such limitations are not given patentable weight, and the claimed limitations are anticipated if a prior art apparatus is ***capable*** of performing the claimed function. MPEP §2114. Claim 1 contains a functional limitation (from a well). Since the disclosed apparatus of Pitt et al. is fully capable of performing the recited function, and contains all recited structural elements, the claim rejection based on Pitt et al. is proper.

In addition, it is respectfully noted that it would be ***improper to import*** specific structural limitations (which are not actually claimed and recited in the claims) from the specification into the claims when interpreting functional language limitations. See MPEP §2111. Thus, the

pending claims will be given their broadest reasonable interpretation consistent with the specification, without importing limitations from the specification into the claims.

8. Regarding claim14, Pitt et al. teaches the flexible barrier being hermetically sealed (col. 2, lines 1 – 3, col. 3, lines 41 – 46).

9. Regarding claim 15, Pitt et al. teaches the flexible barrier being of a hydrogen scavenging material (col. 2, lines 12 – 16).

10. Regarding claim 16, Pitt et al. teaches wherein the flexible barrier includes a coating applied to an outer surface of the flexible barrier for preventing permeation of fluid or gas through the wall of the flexible barrier (col. 3, lines 41 – 46).

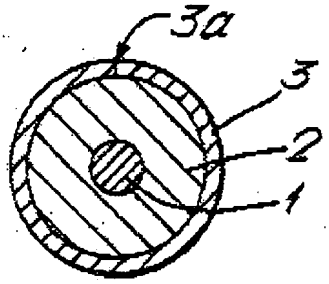
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1, 2, 4, 5, 13, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt et al. (U.S. Patent # 4,696,543) in view of Crawley et al (U.S. Patent # 6,442,304 B1).

12. Regarding claim 1, Pitt et al. teaches a fluidless optical fiber assembly capable of deployment down an instrumentation tube located in a well bore, comprising: a flexible tube having a lumen surrounded by a wall (col. 2, lines 25 – 26, fig. 1), the lumen having an inner diameter; and an optical fiber having a core portion and a cladding portion disposed within the flexible tube, the optical fiber having an outer diameter smaller than an inner diameter of the lumen of the flexible tube, such that an entire length of the optical fiber intended to be deployed down the instrumentation tube fits within the lumen of the flexible tube without the inclusion of any other material or liquid between the optical fiber and the inner diameter of the lumen of the flexible tube.



Flexible tube (3) has an inner diameter

Pitt et al. is silent to the flexible tube also having an outer diameter smaller than an inner diameter of the instrumentation tube.

13. Crawley et al. teaches a conduit for a fiber cable to be inserted into and used for pumping the fiber cable into a well so that the fiber cable can measure such things as temperature and pressure in the well (col. 2, lines 31 – 36).

14. It would have been obvious at the time the invention was made to combine the teachings of Pitt et al.'s optical fiber assembly with Crawley et al.'s teaching of a conduit for a fiber cable to be inserted into so as to insert Pitt et al.'s optical fiber assembly into the conduit of Crawley et al. as it is used as a transportation means for the optical fiber assembly by pumping the fiber cable into a well so that the fiber cable can measure such things as temperature and pressure in the well.

15. Regarding claim 2, Pitt et al. teaches wherein the flexible tube is hermetically sealed (col. 2, lines 1 – 3, col. 3, lines 41 – 46).

16. Regarding claims 4 and 5 Crawley et al. teaches using liquid metal (a coating) for the pumping of the optical fiber through the conduit which also has molecules in the liquid metal for scavenging hydrogen (col. 16, lines 28 – 47, col. 17, lines 11 – 14).

17. Regarding claim 13, Pitt et al. teaches the optical fiber assembly of claim 7 as previously discussed above. Pitt et al. is silent to wherein the flexible barrier member further includes a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment. Crawley et al. teaches wherein the flexible barrier member further includes a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment so as to be able to control the direction and speed of the optical fiber movement (col. 7, lines 64 – 67, col. 8, lines 1 – 7). It would have been obvious to one of ordinary skill in the art

at the time the invention was made to combine the teachings of Pitt et al.'s optical fiber assembly for deployment in a harsh environment with Crawley et al. teaching of a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment so as to be able to control the direction and speed of the optical fiber movement.

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt et al. (U.S. Patent # 4,696,543) in view of Schultz et al. (U.S. Patent # 5,493,626).

19. The cited primary reference substantially teaches the basic claimed optical fiber assembly as discussed in claim 10 above.

20. The cited primary reference is silent to wherein the flexible barrier is made of stainless steel.

21. The added secondary reference teaches a protective sheath surrounding the optical fiber that is composed of stainless steel so as to provide a fluid seal that can be laser welded so as not to overheat the contents of the cable assembly (col. 6, lines 3 – 9).

22. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the optical fiber assembly taught by Pitt et al. with Schultz

et al.'s teaching of using stainless steel as a flexible barrier steel so as to provide a fluid seal that can be laser welded so as not to overheat the contents of the cable assembly.

23. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt et al. (U.S. Patent # 4,696,543) in view of Randazzo (U.S. Patent # 4,687,293).

24. The cited primary reference substantially teaches the basic claimed optical fiber assembly as discussed in claim 10 above.

25. The cited primary reference is silent to wherein the flexible barrier is made of nickel steel.

26. The added secondary reference teaches using a metal sheath composed of a stainless steel containing a high concentration of nickel so as to surround the optical fiber and protect it from acidic environments (col. 5, lines 11 – 15).

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitt et al.'s optical fiber assembly for deployment in a harsh environment with Randazzo's teaching of teaches using a metal sheath composed of a stainless steel containing a high concentration of nickel so as to surround the optical fiber and protect it from acidic environments.

28. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt et al. (U.S. Patent # 4,696,543) in view of Dougherty et al. (U.S. Patent # 6,203,869 B1).

29. Pitt et al. teaches the optical fiber assembly of claim 16 as previously discussed above, but is silent to the coating being a material that reacts with hydrogen to form a molecule that cannot permeate the wall of the flexible barrier tube. Dougherty et al. teaches a hydrogen gettering material to be used as a coating mixed with an adhering epoxy to stop hydrogen from interacting with hydrogen sensitive components (col. 2, lines 35 – 40, and lines 48 – 50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitt et al.'s optical fiber assembly for deployment in a harsh environment with Dougherty et al. teaching of a hydrogen gettering material to be used as a coating mixed with an adhering epoxy to stop hydrogen from interacting with hydrogen sensitive components and applying this epoxy mixed with Palladium resin to the outer surface of the hermetically sealed fiber assembly for a greater protection strength in resisting hydrogen infiltration.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad H. Smith whose telephone number is (571) 270-1294. The examiner can normally be reached on Monday-Thursday 7:30a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-270-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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